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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/711,620

09/29/2004

Chun-Chung Lu

13719-US-PA

5619

31561

7590

10/02/2006

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

EXAMINER

SANTIAGO, MARICELI

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 10/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/711,620

Applicant(s)

LU ET AL.

Examiner

Mariceli Santiago

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-9, 11 and 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Silvernail et al. (6,537,688).

Regarding claim 1, Silvernail discloses an organic electro-luminescent display panel, comprising an organic electro-luminescent device layer (140), on a substrate (110); a first barrier layer (152 Fig. 2; 150 Fig. 3), disposed over the organic electro-luminescent device layer, wherein a gap is formed between the first barrier layer and the organic electro-luminescent device layer; and a second barrier layer (154 Fig. 2; 160 Fig. 3), disposed over the substrate covering the first barrier layer and the organic electro-luminescent device layer.

Regarding claim 2, Silvernail discloses an organic electro-luminescent display panel wherein the first barrier layer is an organic layer (154, Column 5, lines 43-46).

Regarding claim 3, Silvernail discloses an organic electro-luminescent display panel wherein the organic layer is selected from the group consisting of acrylic, methacrylic, polyester, polyethyleneterephthalate, polyethylene, polypropylene and a combination thereof (154, Column 5, lines 43-46).

Regarding claim 5, Silvernail discloses an organic electro-luminescent display panel wherein the first barrier layer is an inorganic layer (150 in Fig. 3, Column 3, lines 42-44; Column 4, lines 55-65).

Regarding claim 6, Silvernail discloses an organic electro-luminescent display panel wherein the inorganic layer is selected from the group consisting of oxide, nitride, carbonate, oxynitride and a combination thereof (Column 3, lines 42-44; Column 4, lines 55-65).

Regarding claim 7, Silvernail discloses an organic electro-luminescent display panel wherein the oxide is selected from the group consisting of silicon oxide, aluminum oxide, titanium oxide, indium oxide, tin oxide, indium tin oxide and a combination thereof (Column 3, lines 42-44; Column 4, lines 55-65).

Regarding claim 8, Silvernail discloses an organic electro-luminescent display panel wherein the nitride is selected from the group consisting of aluminum nitride, silicon nitride and a combination thereof (Column 3, lines 42-44; Column 4, lines 55-65)

Regarding claim 9, Silvernail discloses an organic electro-luminescent display panel wherein the second barrier layer is a multiple layer (Column 5, lines 41-43).

Regarding claim 11, Silvernail discloses an organic electro-luminescent display panel further comprising a first sealant (130), disposed between the substrate and the first barrier layer so as to encapsulate the organic electro-luminescent device layer between the substrate and the first barrier layer.

Regarding claim 13, Silvernail discloses an organic electro-luminescent display panel wherein the organic electro-luminescent device layer is an active matrix organic electro-luminescent device layer or a passive organic electro-luminescent device layer.

Regarding claim 14, Silvernail discloses a method of fabricating an organic electro-luminescent display panel, comprising forming an organic electro-luminescent device layer (140) over a substrate (110), forming a first barrier layer (152) over the organic electro-luminescent device layer, wherein a gap is formed between the first barrier layer and the organic electro-luminescent device layer, and forming a second barrier layer (154 Fig. 2; 160

Fig. 3) over the substrate covering the first barrier layer and the organic electro-luminescent device layer.

Regarding claim 15, Silvernail discloses a method wherein the step of forming the first barrier layer over the organic electro-luminescent device layer comprises forming a first sealant (130) on the substrate surrounding the organic electro-luminescent device layer (140), disposing the first barrier layer (152) over the substrate, wherein the first barrier layer is contact with the first sealant, and curing the first sealant so as to encapsulate the organic electro-luminescent device layer between the substrate and the first barrier layer (Column 5, lines 50-59).

Regarding claim 16, Silvernail discloses a method wherein the step of forming the second barrier layer (160) comprises performing a deposition process (Column 6, lines 24-45).

Claims 1-4, 11 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishizawa et al. (2003/0155861).

Regarding claim 1, Nishizawa discloses an organic electro-luminescent display panel (Fig. 8), comprising an organic electro-luminescent device layer (AR), on a substrate (SUB1); a first barrier layer (GS), disposed over the organic electro-luminescent device layer, wherein a gap is formed between the first barrier layer and the organic electro-luminescent device layer; and a second barrier layer (SUB2), disposed over the substrate covering the first barrier layer and the organic electro-luminescent device layer.

Regarding claim 2, Nishizawa discloses an organic electro-luminescent display panel wherein the first barrier layer is an organic layer (Paragraph [0128]).

Regarding claim 3, Nishizawa discloses an organic electro-luminescent display panel wherein the organic layer is selected from the group consisting of acrylic, methacrylic, polyester,

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polyethyleneterephthalate, polyethylene, polypropylene and a combination thereof (Paragraph [0128]).

Regarding claim 4, Nishizawa discloses an organic electro-luminescent display panel wherein the first barrier layer has a thickness in a range of about 150-300 μ m (Paragraph [0126]).

Regarding claim 11, Nishizawa discloses an organic electro-luminescent display panel further comprising a first sealant (SL), disposed between the substrate and the first barrier layer so as to encapsulate the organic electro-luminescent device layer between the substrate and the first barrier layer.

Regarding claim 13, Nishizawa discloses an organic electro-luminescent display panel wherein the organic electro-luminescent device layer is an active matrix organic electro-luminescent device layer or a passive organic electro-luminescent device layer.

Regarding claim 14, Nishizawa discloses a method of fabricating an organic electro-luminescent display panel, comprising forming an organic electro-luminescent device layer (AR) over a substrate (SUB1), forming a first barrier layer (GS) over the organic electro-luminescent device layer, wherein a gap is formed between the first barrier layer and the organic electro-luminescent device layer, and forming a second barrier layer (SUB2) over the substrate covering the first barrier layer and the organic electro-luminescent device layer.

Regarding claim 15, Nishizawa discloses a method wherein the step of forming the first barrier layer over the organic electro-luminescent device layer comprises forming a first sealant (SL) on the substrate surrounding the organic electro-luminescent device layer (AR), disposing the first barrier layer (GS) over the substrate, wherein the first barrier layer is contact with the first sealant, and curing the first sealant so as to encapsulate the organic electro-luminescent device layer between the substrate and the first barrier layer (Paragraph [0071]).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 103(a) as being obvious over Silvernail et al. (6,537,688).

Regarding claim 10, Silvernail fails to disclose the limitation of the second barrier layer has a thickness in a range of about 1-5 μ m. One skilled in the art would reasonable contemplate the discovery of optimum or workable ranges as an obvious matter of routine experimentation given that the general conditions of the claim are present in the prior art reference. *In re Aller*, 105 USPQ 233. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the second barrier layer having a thickness in a range of about 1-5 μ m, since optimization of workable ranges is considered an obvious matter of routine experimentation.

Claims 1, 12, 14, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al. (JP 200-268955) in view of Silvernail et al. (6,537,688).

Regarding claims 1 and 12, Furukawa discloses an organic electro-luminescent display panel, comprising an organic electro-luminescent device layer (La), on a substrate (6); a first barrier layer (5a), disposed over the organic electro-luminescent device layer, wherein a gap is formed between the first barrier layer and the organic electro-luminescent device layer, and a cap (6a), disposed above the substrate, and a second sealant (6b), disposed between the cap and the substrate so as to encapsulate the organic electro-luminescent device layer and the first

barrier layer between the substrate and the cap. Furukawa fails to disclose the limitation of a second barrier layer, disposed over the substrate covering the first barrier layer and the organic electro-luminescent device layer. However, in the same field of endeavor, Silvernail discloses an organic electro-luminescent display panel, comprising an organic electro-luminescent device layer (140), on a substrate (110), a barrier layer (150), disposed over the organic electro-luminescent device layer, wherein a gap is formed between the first barrier layer and the organic electro-luminescent device layer, the barrier layer (150) comprising a first barrier layer (152) and a second barrier layer (154 in Fig. 2), disposed over the substrate covering the first barrier layer and the organic electro-luminescent device layer, the combination of first and second barrier layers provides a reduction in the content of oxygen and moisture within the organic electro-luminescent device layers, especially during operation, known to severely limit the lifetime of the devices. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the first and second barrier layers arrangement disclosed by Silvernail in the device of Furukawa in order to reduce the content of oxygen and moisture within the organic electro-luminescent device layers, especially during operation, known to severely limit the lifetime of the devices.

Regarding claims 14 and 17, Furukawa discloses a method of fabricating an organic electro-luminescent display panel, comprising forming an organic electro-luminescent device layer (La) over a substrate (6), forming a first barrier layer (5a) over the organic electro-luminescent device layer, wherein a gap is formed between the first barrier layer and the organic electro-luminescent device layer, and a step of forming a cap (6a) over the substrate after the step of forming the first barrier layer. Furukawa fails to disclose the limitation of a forming a second barrier layer over the substrate covering the first barrier layer and the organic electro-luminescent device layer. However, in the same field of endeavor, Silvernail discloses

comprising forming an organic electro-luminescent device layer (140) over a substrate (110), forming a first barrier layer (152) over the organic electro-luminescent device layer, wherein a gap is formed between the first barrier layer and the organic electro-luminescent device layer, and forming a barrier layer (150) comprising a first barrier layer (152) and a second barrier layer (154 in Fig. 2) over the substrate covering the first barrier layer and the organic electro-luminescent device layer, the combination of first and second barrier layers provides a reduction in the content of oxygen and moisture within the organic electro-luminescent device layers, especially during operation, known to severely limit the lifetime of the devices. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate the first and second barrier layers arrangement disclosed by Silvernail in the device of Furukawa in order to reduce the content of oxygen and moisture within the organic electro-luminescent device layers, especially during operation, known to severely limit the lifetime of the devices.

Regarding claim 18, Furukawa discloses a method wherein the step of forming the cap over the substrate comprises forming a second sealant (6b) on the substrate, disposing the cap (6a) over the substrate, wherein the cap is contact with the second sealant, and curing the second sealant so as to encapsulate the organic electro-luminescent device layer, the first barrier layer and the second barrier layer between the substrate and the cap (Paragraph [0059]).

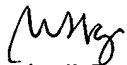
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Mariceli Santiago
Primary Examiner
Art Unit 2879